

STRUCTURE AND ECONOMIC GEOLOGY

U.S. GEOLOGICAL SURVEY
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COMMISSIONERS

PENNSYLVANIA
SEWICKLEY QUADRANGLE



LEGEND

SEDIMENTARY ROCKS

(Areas of subaqueous deposits are shown by patterns of parallel lines, subaerial deposits by patterns of dots and circles)

- Recent**
- Qal Alluvium (in flood plains of the larger streams)
 - Og Latest glacial gravel (outwash sand and gravel of distant origin on lower terraces, probably of Wisconsin age)
 - Olg Later glacial gravel (outwash sand and gravel of distant origin on rock terraces)
- Pleistocene**
- Oeg Earlier glacial gravel (outwash sand and gravel of distant origin on higher rock terraces, probably of Kansan or pre-Kansan age)
 - Ocm Carmichaels formation (clay sand and boulders of local derivation on higher terraces, probably of Kansan or pre-Kansan age)

QUATERNARY

- Carboniferous**
- Cm Monongahela formation (coarse sandstone and shale with the Pittsburgh coal at the base)
 - Ccm Conemaugh formation and Ames limestone lentil (sandstone, shale and limestone with a few small coal beds)
 - Ca Allegheny formation (shale and massive sandstone with beds of limestone and valuable seams of coal and fire clay)

CARBONIFEROUS

Economic and structure data

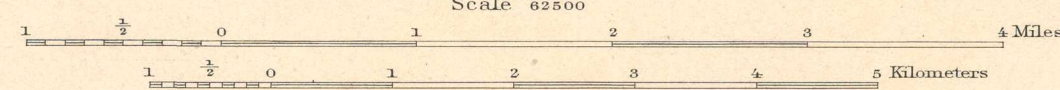
- Coal outcrops
 - ph Pittsburgh coal
 - cl Little Clarkeburg coal
 - el Elk Lick coal
 - er Barton coal
 - bt Bakerstown coal
 - be Fresh Creek coal
 - mh Mahoning coal
 - lf Upper Freeport coal
 - lf Lower Freeport coal
 - ml Middle Kittanning coal
 - lk Lower Kittanning coal
- Quarries sandstone, fire clay, and shale for brick
- Country coal banks

- Structure contours on Ames limestone (interval, 20 feet; broken lines indicate approximate location)

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Topography by Robt. D. Cummin, E. B. Clark, J. H. Wheat, A. C. Roberts,
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Surveyed in 1903 and 1905-1906.

SURVEYED IN COOPERATION WITH THE STATE OF PENNSYLVANIA.

APPROXIMATE MEAN DECLINATION 1905.



Contour interval 20 feet.
Datum is mean sea level.

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